

**GOOGLE LLC'S OPPOSITION TO  
PLAINTIFFS' MOTION TO EXCLUDE  
PORTIONS OF THE REBUTTAL  
EXPERT REPORT OF KONSTANTINOS  
PSOUNIS (DKT. 703)**

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**UNITED STATES DISTRICT COURT**

**NORTHERN DISTRICT OF CALIFORNIA, OAKLAND DIVISION**

CHASOM BROWN, *et al.*, on behalf of  
themselves and all others similarly situated,,

Plaintiffs,

vs.

GOOGLE LLC,

Defendant.

Case No. 4:20-cv-03664-YGR-SVK

**GOOGLE LLC'S OPPOSITION TO  
PLAINTIFFS' MOTION TO EXCLUDE  
PORTIONS OF THE REBUTTAL  
EXPERT REPORT OF KONSTANTINOS  
PSOUNIS (DKT. 703)**

Judge: Hon. Yvonne Gonzalez Rogers

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Google, LLC (“Google”) submits this memorandum of points and authorities in support of its Opposition to Plaintiffs’ Motion to Exclude Portions of the Rebuttal Expert Report of Konstantinos Psounis, Ph.D.

### **STATEMENT OF THE ISSUES TO BE DECIDED**

1. Whether Dr. Psounis’s experience in information theory and networked distributed systems qualify him to provide an authoritative expert report (“Psounis Report”) rebutting twelve of Mr. Hochman’s expert opinions (“Hochman Report”).
2. Whether Dr. Psounis’s Opinions 1, 3, and 7–10 are relevant and have a reliable basis.

#### **I. INTRODUCTION**

Plaintiffs offer no credible grounds to exclude Dr. Psounis’s Opinions 1, 3, and 7 through 10 under Federal Rule of Evidence 702 or the standards explained in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

*First*, Dr. Psounis is uniquely qualified to offer authoritative expert testimony on the particular information technology questions in this case. He is a professor with more than 20 years of experience studying and writing about, among other topics, browser fingerprinting, cookies, entropy, information theory, networked distributed systems, and web protocols. *See infra* § IV.A.

*Second*, Dr. Psounis’s opinions are relevant and reliable. Dr. Psounis’s opinions rebutting Mr. Hochman’s expert report are grounded in fundamental principles of information theory and networked distributed systems that have been tested for decades, validated through peer review, shown to be accurate, and are explained in the Psounis Report in detail. To reach his conclusions, Dr. Psounis conducted an extensive analysis that included reviewing each produced document cited in Mr. Hochman’s report—precisely the same methodology Mr. Hochman used in his report. And even though none of Dr. Psounis’s opinions require or depend on log data analysis, he reviewed hundreds of thousands of records produced from [REDACTED] data sources. *See infra* § IV.B.1.

*Third*, Plaintiffs’ motion has no sound legal basis. Rule 702 and *Daubert* do not require Dr. Psounis to conduct tests, reproduce Mr. Hochman’s data analysis, or analyze log data for Dr. Psounis’s opinions on information theory, networked distributed systems, and Google’s server-side

1 architecture to be reliable. *See infra* § IV.B.2. By seeking to impose such a requirement on Dr.  
2 Psounis’s opinion, Plaintiffs apply the wrong standard for a defense rebuttal expert.

3 *Fourth*, Plaintiffs wrongly claim counsel for Google conducted the log data analysis  
4 described in the Psounis Report. Dr. Psounis asked counsel for Google to provide him with basic  
5 information about produced log data in the record, he verified the information provided, and then  
6 he analyzed that information and the log data himself. *See infra* § IV.C.

## 7 **II. BACKGROUND**

8 *Plaintiffs’ Claims and Related Discovery.* In their operative complaint, Plaintiffs allege that  
9 Google uses “fingerprinting” techniques to (i) intercept and collect the Data at issue<sup>1</sup> and (ii) build  
10 “its profile of users (including Plaintiffs and class members).” Dkt. 395-2 ¶¶ 8, 100. Plaintiffs also  
11 allege that Google “gained a complete, cradle-to-grave profile of users.” *Id.* ¶ 93.

12 Plaintiffs have had ample opportunity to test their theories—and have done so in both  
13 discovery and throughout the Special Master process. In discovery, Google produced more than 6.8  
14 million pages of documents, deposition testimony spanning more than 5,000 pages, and 600 pages  
15 of written discovery. Dkt. 428 at 1. Google has also run multiple rounds of searches for data  
16 associated with identifiers provided by Plaintiffs and their experts under the Special Master process  
17 (████ identifiers across █████ data sources; █████ identifiers across █████ data sources; █████ identifiers across  
18 █████ data sources) and produced more than █████ of data. Dkt. 666-10 ¶ 10.<sup>2</sup>

19 However, discovery has belied Plaintiffs’ central allegations and confirmed that the Data at  
20 issue is segregated from Google Account data and not associated with identified users. Plaintiffs’  
21

22 <sup>1</sup> Data Google receives when Google Account holders use a browser in private browsing mode,  
23 without logging in to their Google Accounts, to visit a third-party non-Google owned and operated  
24 website that uses Google web services, such as Google Analytics or Google Ad Manager.

25 <sup>2</sup> In April 2021, Plaintiffs argued to Magistrate Judge van Keulen that “if Google is going to make  
26 the argument that data ... is actually segregated, we’re not required, your honor, as a matter of law  
27 to just simply take them at their word. We’re actually entitled to test that.” Ansorge Decl. Ex. 2  
28 (4/29/21 Hr. Tr.) 9:25-10:3. The Court agreed and subsequently ordered Plaintiffs to provide Google  
with identifiers from their browsers for Google to run searches for associated data in its systems. *Id.*  
20:7–8 (“They can test it and they can make of the data what they will.”); Dkt. 147-1 at 2. In July  
2021, the Court appointed a Special Master to assist on disputes, “including (1) what information  
Defendant has regarding Plaintiffs; and (2) what information Defendant has regarding identification  
of putative class members.” Dkt. 220 ¶ 2.



experts agree. *See, e.g.*, Dkt. 608-12 (“Hochman Rep.”) ¶ 156 (“[F]or the private browsing information at issue ... class members are not signed into any Google Account.”); *id.* ¶ 160 (“Google stores ... data in different logs depending on the signed-in vs. signed-out mode ... in signed-out mode, Google logs data to Biscotti logs (B logs) for display ads data and Zwieback logs for search ads data”); Ansorge Decl. Ex. 1 (Hochman 7/21/22 Tr.) 450:18-25 (“Q. So does a B log contain GAIA IDs? A. B log is a Biscotti log. I don’t recall instances of B logs containing GAIA IDs[.]”); Dkt. 696-10 (Schneier 7/18/22 Tr.) 136:20-24 (“Q. ... you haven’t seen any evidence that Google’s actually done that [i.e., join authenticated and unauthenticated data]? A. No.”); *see also* Dkt. 659-3 at 10–11 (Data at issue is “orphaned” and not associated with users’ identities).

**Mr. Hochman’s Opinions.** In April 2022, Mr. Hochman submitted his opening report. *See* Hochman Rep. ¶¶ 2–32. Notably, despite Plaintiffs’ allegations, Mr. Hochman did *not* opine (i) that Google used fingerprinting techniques to build profiles of Plaintiffs and purported class members or (ii) that the Data at issue is maintained in a cradle-to-grave profile of identified users. *See* Dkt. 659-10 (“Psounis Rep.”) ¶¶ 7, 78–83; 95–108; Ansorge Decl. Ex. 3 (Hochman 7/20/22 Tr.) 93:8–94:3, 117:1–19. Instead, Mr. Hochman merely concluded that, in theory, Google *could* do these things by combining different data associated with the same IP addresses and User-Agents (in violation of Google’s protocols). In particular, Mr. Hochman opined that (i) entropy is a “metric for user identifiability,” Hochman Rep. ¶ 231; (ii) “IP address and User Agent ‘carries 29.8 bits’ of entropy, which is more than sufficient to uniquely identify individuals in the United States” *id.* ¶ 233; (iii) Google receives IP Addresses and User-Agents with the Data at issue, *id.* ¶ 224; and therefore (iv) “Google can readily use the Data at issue” to identify users, *id.* ¶ 227 and (v) class members, *id.* ¶¶ 293, 302 (“IP + UA fingerprinting method”).

**Dr. Psounis’s Opinions.** On June 7, 2022, Dr. Psounis submitted a rebuttal report that included ten opinions<sup>3</sup> rebutting twelve of Mr. Hochman’s opinions (Hochman Opinions 4, 5, 6, 9,

<sup>3</sup> Psounis Rep. at 1-2 (Opinion 1: Mr. Hochman’s Opinion That Users Can Readily Be Identified From The Data At Issue (# 18) Is Incorrect; Opinion 2: Mr. Hochman’s Opinions On Interception, Notice, And Deletion Of Private Browsing Information (# 4, 5, 6, 26, 31) Are Contrary To Industry Guidelines On Private Browsing; Opinion 3: Mr. Hochman’s Opinions On “Private Browsing Profiles,” Server-Side Processes, And Data Joinability (# 10, 18, 19, 20) Are Inaccurate; Opinion 4:



10, 18, 19, 20, 22, 23, 26, and 31). *See* Psounis Rep. To form his opinions, Dr. Psounis reviewed dozens of deposition transcripts, hundreds of produced and public documents—including all of the produced documents Mr. Hochman cited in his report—and data from [REDACTED] data sources produced under the Special Master process. Psounis Rep. at 191–207.


Dr. Psounis is plainly qualified to provide expert testimony in rebuttal to Mr. Hochman. Dr. Psounis is a Professor and Associate Chair of Electrical and Computer Engineering, as well as a Professor of Computer Science, at the University of Southern California, where he teaches graduate classes on information theory and entropy. Psounis Rep. ¶¶ 16, 21. He received his Ph.D. in Electrical Engineering from Stanford University in 2002, with a thesis on “Probabilistic Methods for Web Caching and Performance Prediction of IP Networks and Web Farms.” *Id.* at 120. He has extensive experience and recognized expertise in networked distributed systems, including the internet and the world wide web, content-delivery networks, data centers and cloud computing, and wireless mobile networking systems. *Id.* ¶ 17. Dr. Psounis has published more than 100 technical papers in these fields, which have been cited tens of thousands of times. *Id.* ¶ 18. His peer-reviewed publications include research and multiple articles on privacy-preserving distributed systems, cookies, fingerprinting, and IP addresses. *Id.* ¶ 21.

In recognition of his contributions to the theory and practice of networked distributed systems, Dr. Psounis was named an Institute of Electrical and Electronics Engineers (IEEE) Fellow and a Distinguished Member of the Association of Computing Machinery. *Id.* ¶ 18. Dr. Psounis is a lead Principal Investigator (PI) of the NSF Secure and Trustworthy Cyberspace Frontiers grant on “Protecting Personal Data Flow on the Internet” and the sole lead PI of the NSF grant on “Spectrum Sharing Systems for Wireless Networks: Performance and Privacy Challenges.” *Id.* ¶ 20. He has

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Mr. Hochman’s Assertion That Google Used Private Browsing Information To Measure Conversions (# 14) Is Misleading; Opinion 5: Mr. Hochman’s Description Of Entropy (# 18) Is Incorrect; Opinion 6: Mr. Hochman’s Assertions On Fingerprinting (# 9, 18) Are Misleading And Unfounded; Opinion 7: Mr. Hochman’s Proposal To Identify Class I (Chrome Class) (# 22) Is Unreasonable and Unreliable; Opinion 8: Mr. Hochman’s Opinion That The “maybe\_chrome\_incognito” Bit Reliably Detects Incognito Traffic (# 23) Is Incorrect; Opinion 9: Mr. Hochman’s Proposal To Identify Class II (# 22) Is Unreasonable And Unreliable; Opinion 10: Mr. Hochman’s Proposed Methods For Identifying Class Members (# 22) Do Not—And Cannot—Account For Shared Devices Or Accounts.).

1 experience designing protocols for web browsing and has been granted several patents related to  
 2 networked systems and web browsing. *Id.* ¶ 22.

3 Dr. Psounis’s Opinion 1 rebutted Mr. Hochman’s opinion that users can readily be identified  
 4 from the Data at issue. *See* Psounis Rep. ¶¶ 1, 35–68. Based on his information technology expertise  
 5 and the hundreds of produced documents, multiple deposition transcripts, and various public sources  
 6 Dr. Psounis reviewed, he concluded that users cannot be readily identified because (i) the data is not  
 7 associated with a Google Account, *id.* ¶¶ 36–47; (ii) the data is stored in an orphaned and  
 8 unidentified state, *id.* ¶¶ 48–64; and (iii) Google’s privacy-preserving technical barriers and policies  
 9 prevent identification of users from signed-out private browsing data, *id.* ¶¶ 65–68. In Opinion 3,  
 10 Dr. Psounis explained that what Mr. Hochman calls “private browsing profiles” are not the “cradle-  
 11 to-grave” profiles Plaintiffs have alleged, but instead consist of interest segments and verticals based  
 12 on orphaned and unidentified data that are limited to single private browsing sessions and are not  
 13 linked to the user or even to her device after the session is closed. *Id.* ¶¶ 3, 78–83. Dr. Psounis also  
 14 analyzed in Appendix G the DBL  data produced under the Special Master process that Mr.  
 15 Hochman cites, and concluded that the data further supports his opinion that the purported profile  
 16 is keyed by pseudonymous identifiers unique to each discrete private browsing session. *Id.* at 186–  
 17 190.

18 Dr. Psounis submitted multiple other opinions rebutting different aspects of Mr. Hochman’s  
 19 IP + UA fingerprinting method. In Opinion 5, Dr. Psounis opined that Mr. Hochman’s description  
 20 of entropy was incorrect because (i) in information technology, entropy is not a “metric for user  
 21 identifiability,” *id.* ¶ 92 (citing Hochman Rep. ¶ 231); (ii) “whether IP address and User Agent (IP  
 22 + UA) carry 29.8 bits, or 20 bits, or 40 bits has no bearing on user identification in this case because  
 23 there is no reliable mapping relating IP + UA to an individual,” *id.* ¶ 93; and (iii) “entropy is an  
 24 average-case metric” that can provide insight into a system but not individuals, *id.* ¶ 94. Dr.  
 25 Psounis’s opinion is also supported by a detailed 18-page technical appendix (Appendix E) with  
 26 formal mathematical proofs, methodologies for calculating entropy, and examples of cases  
 27 “involving less than a handful of people” in which “it is impossible to uniquely identify an individual  
 28 through an IP+UA.” *Id.* at 155–173.

In Opinion 7, Dr. Psounis rebutted Mr. Hochman's IP + UA fingerprinting method for identifying members of Class I (Chrome Class). Over 17 paragraphs, Dr. Psounis explained the common characteristics and fundamental principles of IP addresses and networked distributed systems. *Id.* ¶¶ 111–127. The conclusion he drew on the basis of these scientific principles is that IP + UA cannot even reliably identify “devices, much less class members.” *Id.* ¶ 126. In Opinion 9, Dr. Psounis rebutted Mr. Hochman's IP + UA method for identifying members of Class II. *Id.* ¶¶ 153–155. The 11-page appendix (Appendix F) provided further illustration for Dr. Psounis's Opinions 7 and 9 because Dr. Psounis analyzed the distribution of IP addresses and User-Agents in 144,937 records from [REDACTED] logs that are associated with seven Google Accounts belonging to the five named Plaintiffs and were produced to Plaintiffs under the Special Master process. *Id.* at 174–185.

In Opinions 8 and 10, Dr. Psounis rebutted Mr. Hochman's opinion that the “maybe\_chrome\_incognito” bit can be used to reliably identify Incognito traffic, *Id.* ¶¶ 142–145, and explained that his proposed IP + UA fingerprinting method would not identify class members because it does not address the issue of device and Google account sharing. *Id.* ¶¶ 162–180.

***Dr. Psounis's Deposition.*** On August 19, 2022, Plaintiffs deposed Dr. Psounis. Plaintiffs' counsel repeatedly asked Dr. Psounis questions about his communications with counsel for Google, *see, e.g.*, Ansorge Decl. Ex. 4 (Psounis 8/19/2022 Tr.) 181:5–8, 14–15; 187:25—even after being warned that this line of questioning violated attorney-client privilege as well as the parties' stipulation on expert discovery, *see, e.g., id.* 179:3–6, 184:12–21; *see also* Dkt. 272 ¶ 3(a). Plaintiffs' counsel asked questions about only three opinions and did not ask *any* questions about four of the six opinions Plaintiffs are now seeking to exclude: Opinions 3, 7, 9, 10. *Id.* 237:6–10 (“Q. Did Mr. Mao ask you about any other opinions [apart from 1, 2, and 8]? A. I don't remember Mr. Mao raising any other opinion number to me. I can for sure say that there was no discussion about entropy, on fingerprinting, identifying class members, either class 1 or class 2. No discussion about certain devices or certain accounts.”).

### III. LEGAL STANDARD

Federal Rule of Evidence 702 permits opinion testimony by an expert as long as the witness is qualified and his or her opinion is relevant and reliable. An expert witness may be qualified by

1 “knowledge, skill, experience, training, or education.” Fed. R. Evid. 702. “[R]elevance means that  
 2 the evidence will assist the trier of fact to understand or determine a fact in issue.” *Cooper v. Brown*,  
 3 510 F.3d 870, 942 (9th Cir. 2007); *see also Primiano v. Cook*, 598 F.3d 558, 564 (9th Cir. 2010)  
 4 (“The requirement that the opinion testimony assist the trier of fact goes primarily to relevance.”)  
 5 (internal quotation marks omitted).

6 Under the reliability requirement, the expert testimony must “ha[ve] a reliable basis in the  
 7 knowledge and experience of the relevant discipline.” *Primiano*, 598 F.3d at 565. To ensure  
 8 reliability, the court must “assess the [expert’s] reasoning or methodology, using as appropriate such  
 9 criteria as testability, publication in peer reviewed literature, and general acceptance.” *Id.* at 564.  
 10 These factors are “helpful, not definitive,” and a court has discretion to decide how to test reliability  
 11 “based on the particular circumstances of the particular case.” *Id.* (internal quotation marks and  
 12 footnotes omitted); *see also Otto v. LeMahieu*, 2021 WL 1615311, at \*4 (N.D. Cal. Apr. 26, 2021)  
 13 (Gonzalez Rogers, J.) (“[A]n expert must ‘employ in the courtroom the same level of intellectual  
 14 rigor that characterizes the practice of an expert in the relevant field.’”); *Orgain, Inc. v. N.*  
 15 *Innovations Holding Corp.*, 2022 WL 2189648, at \*2 (C.D. Cal. Jan. 28, 2022) (“the exclusion of  
 16 expert testimony is ‘the exception rather than the rule.’”) (quoting Advisory Committee Notes to  
 17 2000 Amendments to Fed. R. Evid. 702). “When evaluating specialized or technical expert opinion  
 18 testimony, ‘the relevant reliability concerns may focus upon personal knowledge or experience.’”  
 19 *United States v. Sandoval-Mendoza*, 472 F.3d 645, 655 (9th Cir. 2006) (citation omitted); *see also*  
 20 *Hangarter v. Provident Life & Accident Ins. Co.*, 373 F.3d 998, 1017 (9th Cir. 2004) (“the Daubert  
 21 factors ... simply are not applicable to [non-scientific] testimony, whose reliability depends heavily  
 22 on the knowledge and experience of the expert, rather than the methodology behind it.”) (internal  
 23 quotation marks and citations omitted).

24 In evaluating expert reports at the class certification stage, the Court “does not make an  
 25 ultimate determination of the admissibility of an expert’s opinions for purposes of a dispositive  
 26 motion or trial.” *Otto*, 2021 WL 1615311, at \*1. Instead, the Court “considers only whether the  
 27 expert evidence is ‘useful in evaluating whether class certification requirements have been met.’” *Id.*  
 28 (citing *Tait v. BSH Home Appliances Corp.*, 289 F.R.D. 466, 495–96 (C.D. Cal. 2012)). “The



relevant inquiry is a tailored Daubert analysis which scrutinizes the reliability of the expert testimony in light of the criteria for class certification[.]” *Id.*

#### IV. ARGUMENT

##### A. Dr. Psounis Is Qualified To Rebut Mr. Hochman

An expert witness may be qualified by “knowledge, skill, experience, training, or education.” Fed. R. Evid. 702. Dr. Psounis significantly exceeds the requirements for qualification under each of these separate categories. His academic and industry experience qualify him to testify with authoritative expertise on the topics at issue: information theory (entropy), browser fingerprinting, networked distributed systems, and Google’s server-side architecture and practices.

There is no question that Dr. Psounis meets and exceeds the standard courts expect of experts in the field, and tellingly Plaintiffs do not claim otherwise. His extensive experience and expertise in networked distributed systems, including the internet and the world wide web, content-delivery networks, data centers and cloud computing, and wireless mobile networking systems have been recognized repeatedly. Psounis Rep. ¶ 17. With more than 20 years of experience in the relevant fields, Dr. Psounis is uniquely qualified to offer expert testimony rebutting Mr. Hochman—who when he submitted his expert report had not yet started his Ph.D. in computer science (Hochman Rep. ¶ 62) and had a single, co-authored, peer-reviewed publication Ansorge Decl. Ex. 3 (Hochman 7/20/22 Tr. 66:4–68:5); *see Scott v. Ross*, 140 F.3d 1275, 1285–86 (9th Cir. 1998) (rejecting objection to expert testimony under Rule 702 where expert was professor in relevant area with 19 years of experience).

##### B. Dr. Psounis’s Opinions Are Relevant And Reliable

Plaintiffs argue Dr. Psounis’s Opinions 1, 3, 7 through 10 should be excluded because “(unlike Mr. Hochman) Dr. Psounis did not base them on a scientific review or analysis of the log schema and data produced under the Special Master process.” Mot. at 8; *see also id.* at 9 (asserting that “[h]e did not test Google’s systems”). Plaintiffs are wrong on the law and the facts.

1. Dr. Psounis Thoroughly Reviewed Mr. Hochman’s Opinions Including All Of The Documents On Which Mr. Hochman Relied

Although under Rule 702 Dr. Psounis could rely solely on his experience in offering his opinions in the 119 paragraphs Plaintiffs now seek to exclude, Dr. Psounis did much more. He considered 31 deposition transcripts, 118 public documents, 368 produced documents (including all of the produced documents that Mr. Hochman cited in his report), and data files, *including* [REDACTED] *of log data*,<sup>4</sup> before reaching his conclusions. Psounis Rep. at 191–207. Such materials are “of a type reasonably relied upon by experts in a particular field,” *Scott*, 140 F.3d at 1286. Based on these various sources, Dr. Psounis concluded that users cannot be readily identified from the Data at issue, Google does not maintain any “cradle-to-grave” profile of users, and Mr. Hochman’s IP + UA fingerprinting method is not viable “because there is no reliable one to one mapping from IP + UA to an individual class member.” Psounis Rep. ¶ 111; *see supra* at 5–6. “This is proper rebuttal and satisfies the requirements of Rule 702.” *Czuchaj v. Conair Corp.*, 2016 WL 4414673, at \*5 (S.D. Cal. Aug. 19, 2016) (holding that each party’s engineering expert satisfies the requirements of Rule 702).

Plaintiffs’ claim that “Dr. Psounis does not apply any methodology, let alone a reliable one” (Mot. at 11) is belied by the Psounis Report as well as Mr. Hochman’s testimony. For example, unlike Mr. Hochman, who testified that “entropy is just a fancy way of saying the quantity of information” (Ansorge Decl. Ex. 3 (Hochman 7/20/22 Tr.) 53:2–4), Dr. Psounis’s Report included a detailed exposition of information theory and methodology to calculate entropy—using formulas and mathematical proofs—showing that Mr. Hochman’s opinions on class member identification are erroneous and laying a foundation for three of the opinions Plaintiffs seek to exclude (Opinions 7, 9, 10). *See* Psounis Rep. ¶¶ 6, 90–94; *id.* at 155–173. Indeed, far from critiquing such an approach as unreliable, Mr. Hochman testified that Dr. Psounis’s methodology for calculating entropy is (i) aligned with what is taught at universities and (ii) mathematically correct. *See* Ansorge Decl. Ex. 1 (Hochman 7/21/22 Tr.) 530:23–24 (testifying that “this stuff is all just basic course work or basic lecture”); *id.* 525:12–13 (“my criticism is not that he’s somehow gotten the math wrong”). Dr.

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<sup>4</sup> “IP + UA Analysis (Source Material: GOOG-BRWN-00847947-948) (CONFIDENTIAL),” Psounis Rep. at 207, relates to Dr. Psounis’s analysis of log data produced in this case under the Special Master process (GOOG-BRWN-00847947-948) consisting of 144,937 records from [REDACTED] different logs.

1 Psounis’s opinions therefore “ha[ve] a reliable basis in the knowledge and experience of the relevant  
2 discipline,” *Primiano*, 598 F.3d at 565, and should not be excluded.

3 Plaintiffs’ attempt to analogize the Psounis Report to the expert report at issue in *Otto v.*  
4 *LeMahieu* is unavailing. Mot. at 11, 13. In *Otto*, the expert submitted a “cursory seven (7) page  
5 expert report.” 2021 WL 1615311, at \*2. The main body of the Psounis Report is 115 pages and the  
6 appendices add a further 88 pages. *See* Psounis Rep. In *Otto*, the Court found that the expert’s  
7 testimony “reflect[ed] a high level of speculation, untethered to and unsupported by any facts in the  
8 record.” 2021 WL 1615311, at \*4. In this case, Dr. Psounis’s testimony is based on, among other  
9 things, more than 20 years of relevant experience and authoritative knowledge, every single  
10 produced document cited in Mr. Hochman’s opening report, as well as generally accepted principles  
11 and methodologies of information theory. There is thus no basis for exclusion.

## 12 2. Dr. Psounis Was Not Required To Conduct Studies Or Tests Of Log Data

13 Plaintiffs’ assertion that Dr. Psounis’s report should be excluded because he did not conduct  
14 independent testing in rebutting Mr. Hochman’s opinions 10, 18, 19, 20, 22, and 23 is similarly  
15 invalid. First, Mr. Hochman’s opinions are not exclusively based on any specific data tests. *See*,  
16 *e.g.*, Hochman Rep. ¶ 223 (“Based on my analysis of the case discovery, including with the Special  
17 Master process, and my experiments, it is my opinion that Google ... systematically collected and  
18 stored detailed private browsing data that constitutes what is commonly understood to be sensitive  
19 fingerprinting data, which can be used to identify users and join data.”). Dr. Psounis rebutted Mr.  
20 Hochman’s opinions by analyzing the same documents that Mr. Hochman cited in his report,  
21 showing that Mr. Hochman’s IP + UA fingerprinting method was contrary to accepted information  
22 theory principles (*see* Psounis Rep. ¶¶ 90–94; *id.* at 155–173), and showing that it will not work  
23 when applied to common networked distributed systems (*see id.* ¶¶ 111–127, 153–155).

24 Second, neither Rule 702 nor *Daubert* require an expert to conduct a study or test, and  
25 certainly not a defense expert providing a rebuttal report. “While one of the Daubert factors suggests  
26 that the reliability of expert testimony can be judged by whether the expert’s technique or theory  
27 can be and has been empirically tested, such testing is not required.” *Linares v. Crown Equip. Corp.*,  
28 2017 WL 10403454, at \*12 (C.D. Cal. Sept. 13, 2017) (internal citation omitted); *Wyman v.*



1 *Sunbeam Prod., Inc.*, 2021 WL 1531000, at \*3 (N.D. Cal. Apr. 19, 2021) (denying motion to exclude  
 2 because “Plaintiffs have not pointed ... to any authority suggesting ... a defense rebuttal expert is  
 3 obligated to conduct his own studies or tests”). Nor is there anything in Dr. Psounis’s rebuttal  
 4 opinions that requires data produced under the Special Master process to be tested. Plaintiffs have  
 5 the burden of proving their allegations.

6 Plaintiffs incorrectly claim that Dr. Psounis “completely ignored” Mr. Hochman’s limited  
 7 analysis of the produced data, Mot. at 9, and his opinions are “akin to concluding the Earth is flat  
 8 based on a walk down the block,” Mot. at 14. Dr. Psounis’s conclusions are not based on a fringe  
 9 theory built on fallacious inferences from skewed samples. Instead, Dr. Psouni studied Mr.  
 10 Hochman’s analysis and produced log data, and showed that Mr. Hochman’s opinions are  
 11 contradicted by the application of generally accepted information theory principles to real-world  
 12 networked distributed systems. *See supra* at 5–6; *see also Primiano*, 598 F.3d at 565 (court must  
 13 assess expert’s reliability “using as appropriate such criteria as testability, publication in peer  
 14 reviewed literature, and general acceptance”). Just as it was not necessary to walk around the Earth  
 15 to rebut the theory that the Earth is flat, it is also not necessary for Dr. Psounis to “conduct a  
 16 competing analysis of the private browsing data that Mr. Hochman analyzed” (Mot. at 11) to reliably  
 17 conclude that Mr. Hochman’s opinions are incorrect. *See Maldonado v. Apple, Inc.*, 2021 WL  
 18 1947512, at \*11 (N.D. Cal. May 14, 2021) (denying motion seeking to exclude expert opinion on  
 19 the ground that expert did not “attempt[] any testing”); *see also Ramirez v. ITW Food Equip. Grp.,*  
 20 *LLC*, 686 F. App’x 435, 440 (9th Cir. 2017) (district court abused its discretion by excluding expert  
 21 testimony of engineers because “the reliability of an expert’s theory turns on whether it *can* be  
 22 tested, not whether he has tested it himself.”) (emphasis added; citation and quotations omitted).

23 Mr. Hochman’s data analysis was allegedly able to (1) identify Incognito traffic with 100%  
 24 accuracy for 37,000 entries using the maybe\_chrome\_incognito bit, and (2) link certain private  
 25 browsing data with Plaintiffs’ Google accounts or third-party accounts. Mot. at 9. But his limited  
 26 data analysis has not established anything, let alone anything that requires data testing to rebut.  
 27 Hochman Rep. ¶ 237. As Dr. Psounis explained in his report: (1) the maybe\_chrome\_incognito bit  
 28 cannot reliably identify Incognito web traffic because it relies on the absence of the X-Client Data

header, which may be absent for a number of reasons that have nothing to do with whether the browser was in Incognito mode, Psounis Rep. ¶¶ 142-145; (2) Mr. Hochman’s proposed fingerprinting method using IP + UA or pseudonymous identifiers cannot reliably identify class members because, among other reasons, the identical combination of IP + UA may be shared by multiple individuals, *id.* ¶¶ 111-141; 153-180, and in any event, it is not reasonable to scale a methodology used for individual identified named Plaintiffs to millions of potential class members, which as Plaintiffs’ experts acknowledged, would misidentify many class members and violate their privacy, *see, e.g., id.* ¶ 158; Ansorge Decl. Ex. 1 (Hochman 7/21/22 Tr.) 473:24–476:4; *id.* Ex. 5 (Schneier 7/18/22 Tr.) 129:23-131:23; 170:15-25; 188:24-191:19. None of Dr. Psounis’s critiques of Mr. Hochman’s report require any data testing.

In fact, all of Plaintiffs’ objections to the Psounis Report center on one issue: whether Dr. Psounis’s opinions should be stricken because he did not conduct a competing analysis of the data Mr. Hochman analyzed, which goes to the weight and credibility of the Psounis Report, and are “not proper bases to bring a Daubert motion.” YGR Standing Order, ¶ 11; *see also Kennedy v. Collagen Corp.*, 161 F.3d 1226, 1230–31 (9th Cir. 1998) (finding that the presence of “opposing experts” and “additional tests” “may increase or lessen the value of the expert’s testimony [but] should not preclude [its] admission”); *In re MacBook Keyboard Litig.*, 2022 WL 1604753, at \*4 (N.D. Cal. Jan. 25, 2022) (denying motion to strike expert opinions because although “Apple contends that [the] opinion is irrelevant and unreliable because [expert] did not perform a root cause analysis, his opinions are based on predetermined conclusions and cherry-picked data ... such disputes about the data on which [expert] based his opinion go to the weight of the evidence, not its admissibility.”). Accordingly, Plaintiffs offer no basis to exclude Dr. Psounis’s reliable opinions.

### **C. Counsel For Google Did Not Conduct The Analysis In The Psounis Report**

The Court should reject Plaintiffs’ argument that “the limited testing in [Dr. Psounis’s] report was conducted by Google’s counsel, not Dr. Psounis.” Mot. at 15. Plaintiffs are referring to the analyses described in Appendices F and G, *id.* at 8, which Dr. Psounis designed and executed using a limited set of information compiled from the record by Google’s counsel under Dr. Psounis’s

1 instruction and supervision and then produced to Plaintiffs along with Dr. Psounis's report.<sup>5</sup> The  
 2 fact that Google's counsel assisted Dr. Psounis in gathering information from the record does not  
 3 warrant an order excluding his opinions. Indeed, the stipulation the parties executed governing  
 4 expert discovery expressly states: "the content of oral, written or other communications among and  
 5 between ... counsel and the expert" "shall not be the subject of any form of discovery." Dkt. 272 ¶  
 6 3(a)(i). Plaintiffs' attempt to exclude Dr. Psounis's appendices based on information clearly  
 7 protected by the stipulation is improper.

8 Both appendices are proper and reliable and should not be excluded. Appendix F analyzed  
 9 the distribution of IP and UA in 144,937 records from [REDACTED] logs produced under the Special Master  
 10 process, which provided further illustration for Dr. Psounis's Opinions 7 and 9 where Dr. Psounis  
 11 rebutted Mr. Hochman's IP + UA fingerprinting method for identifying class members. *See supra*  
 12 at 6. To prepare Appendix F, Dr. Psounis (1) reviewed 144,937 records from [REDACTED] logs produced under  
 13 the Special Master process; (2) designed an IP + UA analysis of the produced data; (3) requested  
 14 specific information about statistical distribution of IP addresses and User-Agents in produced data  
 15 (available to Plaintiffs) from counsel for Google (which distributions were attached to Dr. Psounis's  
 16 report); (4) verified the information that counsel for Google provided; and (5) conducted the IP +  
 17 UA analysis set forth in Appendix F.

18 Appendix G analyzed relevant data produced under the Special Master process in  
 19 furtherance of Dr. Psounis's Opinion 3 that the purported "profiles" are keyed to pseudonymous  
 20 identifiers unique to each discrete private browsing session and not linked to the user or her device  
 21 after the session is closed. *See supra* at 6. To prepare Appendix G, Dr. Psounis (1) reviewed the  
 22 relevant data; (2) instructed and supervised counsel for Google in identifying inferred interest  
 23 segments using produced decoding files; (3) verified the identified information that counsel for  
 24 Google provided; and (iv) conducted the comparison analysis set forth in Appendix G.

25 The Court should reject Plaintiffs' argument because Dr. Psounis prepared his own analysis  
 26 on the basis of his extensive experience in the field and the facts in the record. And even as to the  
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28 <sup>5</sup> "IP + UA Analysis (Source Material: GOOG-BRWN-00847947-948) (CONFIDENTIAL)."

1 limited information Plaintiffs challenge, Dr. Psounis designed the process to generate, supervised  
 2 the generation of, and verified the information counsel provided. *See* Ansorge Decl. Ex. 4 (Psounis  
 3 8/19/2022 Tr.) 179:21–25 (“[t]he experiment tests ... have been run essentially by me in the sense  
 4 that I supervised them and I ... gave very, very precise instructions”); *id.* 180:14–18 (“Ms. Tracy  
 5 Gao was the person that ... did them and then sent the data back to me, and then there was back and  
 6 forth, to make sure everything is properly done”); *id.* 177:14–15 (“[t]here are no parts or tests of my  
 7 report that were done by [Ms. Gao].”); *id.* 181:7–8 (“no parts of my report was done by Ms. Gao”).  
 8 Dr. Psounis also appropriately disclosed the data underlying Appendices F and G as is required  
 9 under the Federal Rules. *See* Psounis Rep. at 207; Fed. R. Civ. P. 26(a)(2)(B)(ii).

10 The authorities Plaintiffs rely on are inapposite. As a threshold matter, Plaintiffs rely on a  
 11 number of cases from other circuits that involved the exclusion of an *opening expert’s opinions on*  
 12 *an issue for which the party proffering the expert had the burden of proof*. As a rebuttal expert, Dr.  
 13 Psounis responded to Mr. Hochman’s claims, and he formed his rebuttal opinions based on his own  
 14 analysis of data, deposition testimony, and documents available to Mr. Hochman. *See, e.g., TCL*  
 15 *Commc’ns Tech. Holdings Ltd. v. Telefonaktenbologet LM Ericsson*, 2016 WL 7042085, at \*5 (C.D.  
 16 Cal. Aug. 17, 2016) (“[S]o long as Ericsson’s experts do not stray from the ‘same subject matter’ as  
 17 TCL’s experts, it is proper for those experts to utilize their own independent analyses and  
 18 methodologies to arrive at conclusions that rebut TCL’s expert’s conclusions.”). Plaintiffs spill  
 19 much ink on what Dr. Psounis purportedly failed to review or consider, but any “purported failure  
 20 to review certain relevant information goes to the weight of the opinions at issue and can be  
 21 addressed during cross-examination.” *In re Twitter, Inc. Securities Litig.*, 2020 WL 9073168, at \*3  
 22 (N.D. Cal. Apr. 20, 2020); *see also Apple, Inc. v. Samsung Elecs. Co.*, 2014 WL 794328, at \*23  
 23 (N.D. Cal. Feb. 25, 2014) (“Samsung’s contention that Dr. Vellturo did not address certain public  
 24 statements or that he failed to have a cogent basis for ignoring those statements when pressed at  
 25 deposition goes to the weight, not admissibility, of his opinion.”).

26 The other cases Plaintiffs cite are also readily distinguishable. In *In re TMI Litig.*, the  
 27 expert’s opinions were excluded because she relied on “incomplete summaries, not complete  
 28 hospital or medical records,” which were (i) “the only information that [the expert] had about the

1 health histories of the people whose blood she examined”; and (ii) were based on interviews of  
 2 subjects conducted by employees of Plaintiffs’ counsel, rather than “medical or hospital records.”  
 3 193 F.3d 613, 697-98 (3d Cir. 1999). Similarly, in *Sommerfield v. City of Chicago*, the expert erred  
 4 by relying on summaries of deposition transcripts prepared by counsel, rather than reviewing the  
 5 deposition transcripts themselves. 254 F.R.D. 317, 324 (N.D. Ill. 2008). And in *Lyman v. St. Jude*  
 6 *Med. S.C., Inc.*, the expert’s opinions were excluded because he relied on summaries of sales figures  
 7 provided by counsel and did not review the underlying records themselves to confirm the  
 8 summaries’ accuracy. 580 F. Supp. 2d 719 (E.D. Wis. 2008). For Appendix G, Dr. Psounis asked  
 9 for specific records from the same data set that Mr. Hochman used for his analysis—not “incomplete  
 10 summaries” or counsel’s subjective interpretations of statements from interviewees or deponents.  
 11 For Appendix F, Dr. Psounis independently verified information with the underlying data set.

12 As to *Baker v. FirstCom Music*, that case involved the exclusion of a handwriting expert’s  
 13 opinions because she did not “independently verif[y] the signatures she used as a control group in  
 14 her analysis,” but instead relied on representations from counsel that the control group signatures  
 15 belonged to specific individuals. 2018 WL 2572725, at \*\*5-6 (C.D. Cal. Mar. 27, 2018). Finally,  
 16 *Phillips Med. Sys. Intern. B.V. v. Bruetman* did not involve expert reports or a *Daubert* motion; the  
 17 case involved an affidavit from attorneys who impersonated potential buyers of an apartment in  
 18 order to view the apartment and elicit statements from a real estate agent. 8 F.3d 600, 606 (7th Cir.  
 19 1993).

20 Even if the Court were to credit any of Plaintiffs’ critiques about Appendices F and G, his  
 21 opinion would still be valid because Plaintiffs have not shown that there is any error in the  
 22 appendices (which shows Dr. Psounis’s analysis of data also available to Plaintiffs) or the underlying  
 23 data (which was likewise available to Plaintiffs). Instead, they simply argue that because a subset of  
 24 data was collected by counsel and provided to Dr. Psounis, his analysis must be excluded *in toto*.  
 25 That is not the law. *See, e.g., Enplas Display Device Corp. v. Seoul Semiconductor Co., Ltd.*, 2015  
 26 WL 9303980, at \*2 (N.D. Cal. Dec. 22, 2015) (“Federal Rule of Evidence 703 envisions the  
 27 likelihood that an expert would receive data from a party or a third-party. The rule permits an expert  
 28 to ‘base an opinion on any facts or data in the case that the expert has been made aware of or

1 personally observed.’ Enplas’ arguments [regarding the use of a third party to collect certain data  
2 for the expert] go to the credibility of [the expert]’s conclusions, not the appropriateness of his  
3 methodology.”); *Matter of James Wilson Assoc.*, 965 F.2d 160, 172 (7th Cir. 1992) (“An expert is  
4 of course permitted to testify to an opinion formed on the basis of information that is handed to  
5 rather than developed by him”). Nor did Dr. Psounis “ground his opinions” (Mot. at 16) in any of  
6 the data analysis at issue. None of Dr. Psounis’s Opinions 3, 7, and 9 are dependent on the analysis  
7 that Dr. Psounis conducted in Appendices F and G, which are intended to provide examples of the  
8 principles he has explained in the three opinions.

9 In short, there is no justification for excluding any of Dr. Psounis’s opinions.

## 10 **V. CONCLUSION**

11 For all these reasons, Google respectfully requests that the Court deny Plaintiffs’ Motion.  
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